

REMARKS

The Office Action mailed May 31, 2007 has been carefully considered. Reconsideration in view of the following remarks is respectfully requested.

Information Disclosure Statement

Submitted herewith for consideration is an Information Disclosure Statement (IDS).

Election Requirement

Applicants affirm the election, without traverse, to prosecute the invention of Group I, Claims 1-6. Applicants reserve the right to pursue the patentability of the subject matter of the non-elected claims.

Rejection(s) Under 35 U.S.C. § 103 (a)

Claims 1, 3-6, 11-14 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Gotovchikov (U.S. pat. no. 5,750,822), with or without FR 96 09382. Claim 2 stands rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Gotovchikov with or without FR 96 09382, in view of Boen (WO 98/05185). These rejections are respectfully traversed.

Claim 1, from which the remaining claims depend, has been amended to include the limitations of claim 11, rewording said limitations so that they related to structural features that differentiate over the art relied upon in the rejection. In particular, Claim 1 now recites an oxygen plasma torch configured to create an oxidizing atmosphere in the furnace. An oxygen plasma torch, it will be appreciated, is a structural limitation and is not disclosed in Gotovchikov. Gotovchikov discloses a crucible equipped with two heating means including an upper plasma torch directed at the free surface of the molten pool and an inductor facing the crucible wall. However, Gotovchikov is silent on the kind of plasma used and does not suggest use of an oxygen plasma. Gotovchikov mentions that an oxidizing material like oxygen can be fed into the molten pool, for converting radioactive elements in the slag phase and promoting an oxidation and

a decomposition of toxic and organic materials into safe gases like CO₂ or steam (col. 3, 1. 13-22). However, such a process of feeding oxygen into the molten pool is insufficient because a part of the toxic or organic elements remains in an unoxidized (or not fully oxidized) state so that it can still be released into the atmosphere over the crucible as gases, ashes or particles. Such products can be CO, chlorides, sulphides or cesium. They are not altered after they have abandoned the molten pool, and they must be filtered or receive another additional treatment before the gases reach the environment, instead of remaining in the slag phase. The inventive oxygen plasma performs not only a heating, but a much more energetic oxidation that allows a complete combustion of these noxious products, including those already present in the crucible atmosphere as gases or a suspension. For instance, noxious CO is converted into safe CO₂. Hence the invention according to the amended claim can be regarded as an improvement with advantages over Gotovchikov.

In addition, feeding gas oxygen into the crucible atmosphere (this is not mentioned by Gotovchikov) would not achieve a complete combustion of these noxious products either so that oxygen in plasma state appears to be necessary.

It should also be noted that Gotovchikov uses two heating means in order to entertain the respective heatings and meltings of a metallic phase at the bottom and a slag phase at the top of the crucible (column 3, lines 1-9: induction is for the metallic phase and has little effect on the ceramic and organic phases the slag phase consists of), whereas a metallic phase is avoided in the invention (page 3, lines 19-20; page 6, lines 19-20). Having a different purpose, Gotovchikov would not help to suggest the invention in any event.

Conclusion


In view of the preceding discussion, Applicants respectfully urge that the claims of the present application define patentable subject matter and should be passed to allowance.

If the Examiner believes that a telephone call would help advance prosecution of the present invention, the Examiner is kindly invited to call the undersigned attorney at the number below.

Please charge any additional required fees, including those necessary to obtain extensions of time to render timely the filing of the instant Amendment and/or Reply to Office Action, or credit any overpayment not otherwise credited, to our deposit account no. 50-1698.

Respectfully submitted,
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